

Overall Question 1: *Structural drivers of electric rates*

Executive Summary

Structural factors including electricity consumption and fuel are the major underlying drivers of differences in electric rates between the states. While commodity cycles and utility investment cycles can move rates up and down over time, the structural differences between states tend to remain stable and are not impacted substantially by the regulatory model. Some states deregulated over the last 15 years in an effort to reduce rates, but the structural factors driving rates in these states could not be changed by deregulation.

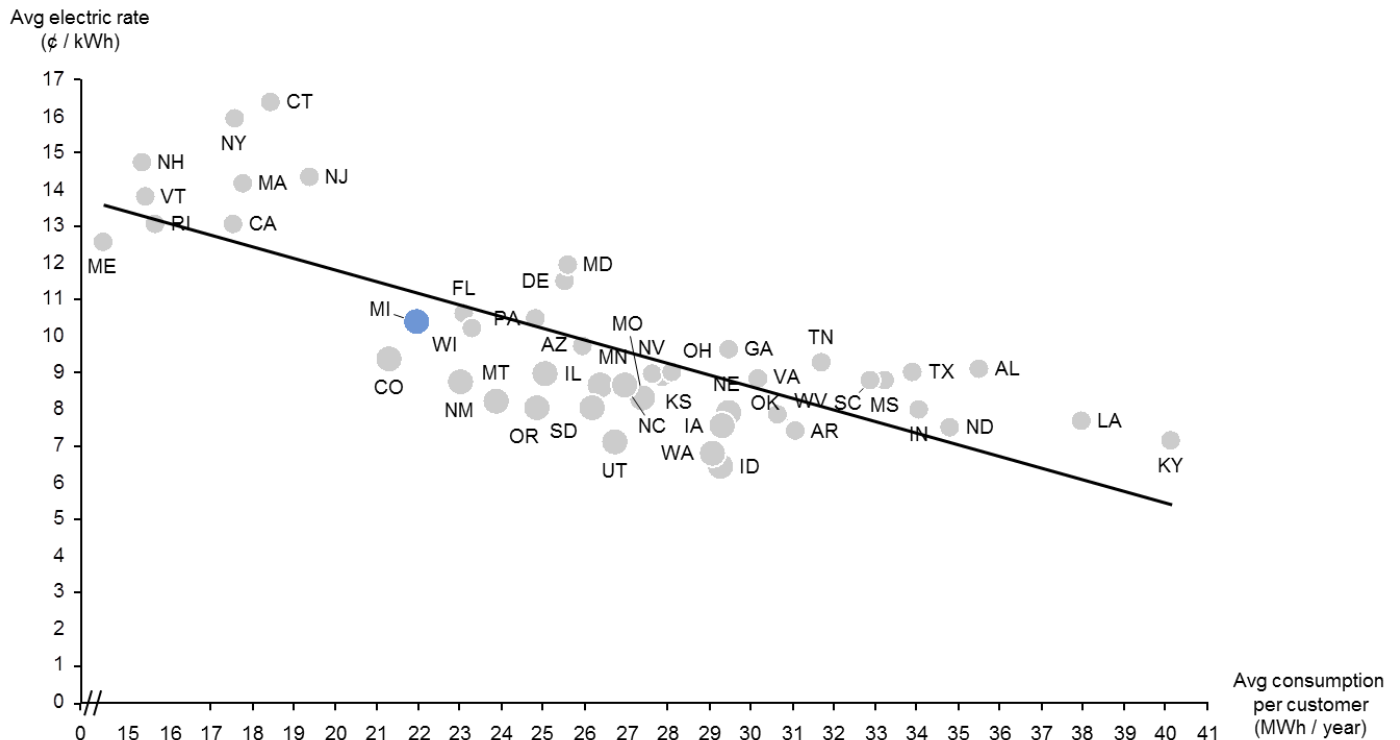
1. Electric consumption per customer is the single strongest driver of electric rates, explaining 60% of the variation in average rates from state to state. The electric power industry is capital intensive, with substantial fixed costs required to guarantee system reliability. These costs must be divided by the total consumption to determine the electric rate; if consumption is low, rates tend to be high and when consumption is high, rates tend to be low
 2. Electric rates are not the best measure of the affordability of electricity. When consumption is low, as is the case in Michigan, rates are high. However, the bills customers pay in Michigan, a much better measure of affordability, are among the lowest in the country
 3. Three other structural factors explain an additional 25% of the variation in rates across states, and explain why some states fall significantly above or below the “best fit” line based on consumption
 - Proximity to inexpensive coal
 - Access to plentiful, low-cost hydroelectric generation
 - The lack of coal generation
 4. Deregulation has no ability to change the structural drivers for electric rates. Deregulated states still have higher rates than regulated states and the gap between them has existed for the past 15 years
-

Overall Question 1: *Structural drivers of electric rates*

- 1. Electric consumption per customer is the single strongest driver of electric rates, explaining 60% of the variation in average rates from state to state. The electric power industry is capital intensive, with substantial fixed costs required to guarantee system reliability. These costs must be divided by the total consumption to determine the electric rate; if consumption is low, rates tend to be high and when consumption is high, rates tend to be low.**

As shown in Exhibit 1, there is a very strong (negative) correlation between the level of consumption per customer and rates. States with high consumption have lower rates, but their bills are much higher. The per-customer electric consumption in states like Louisiana and Kentucky is nearly twice that of Michigan.

Exhibit I: Correlation between 2011 Consumption per Customer and Average Rates

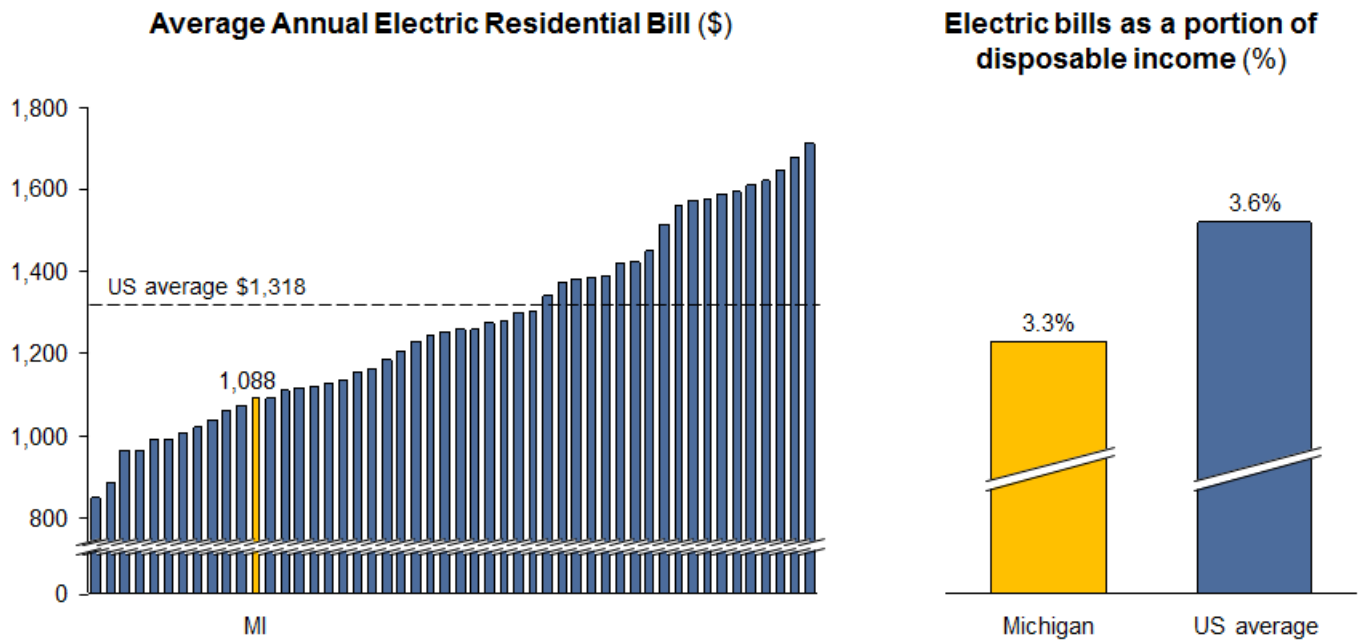


Source: EIA Form 861

Overall Question 1: *Structural drivers of electric rates*

- 2. Electric rates are not the best measure of the affordability of electricity. When consumption is low, as is the case in Michigan, rates are high. However, the bills customers pay in Michigan, a much better measure of affordability, are among the lowest in the country.**

Exhibit II: State Residential Bills and Electric Bills as a Portion of Disposable Income

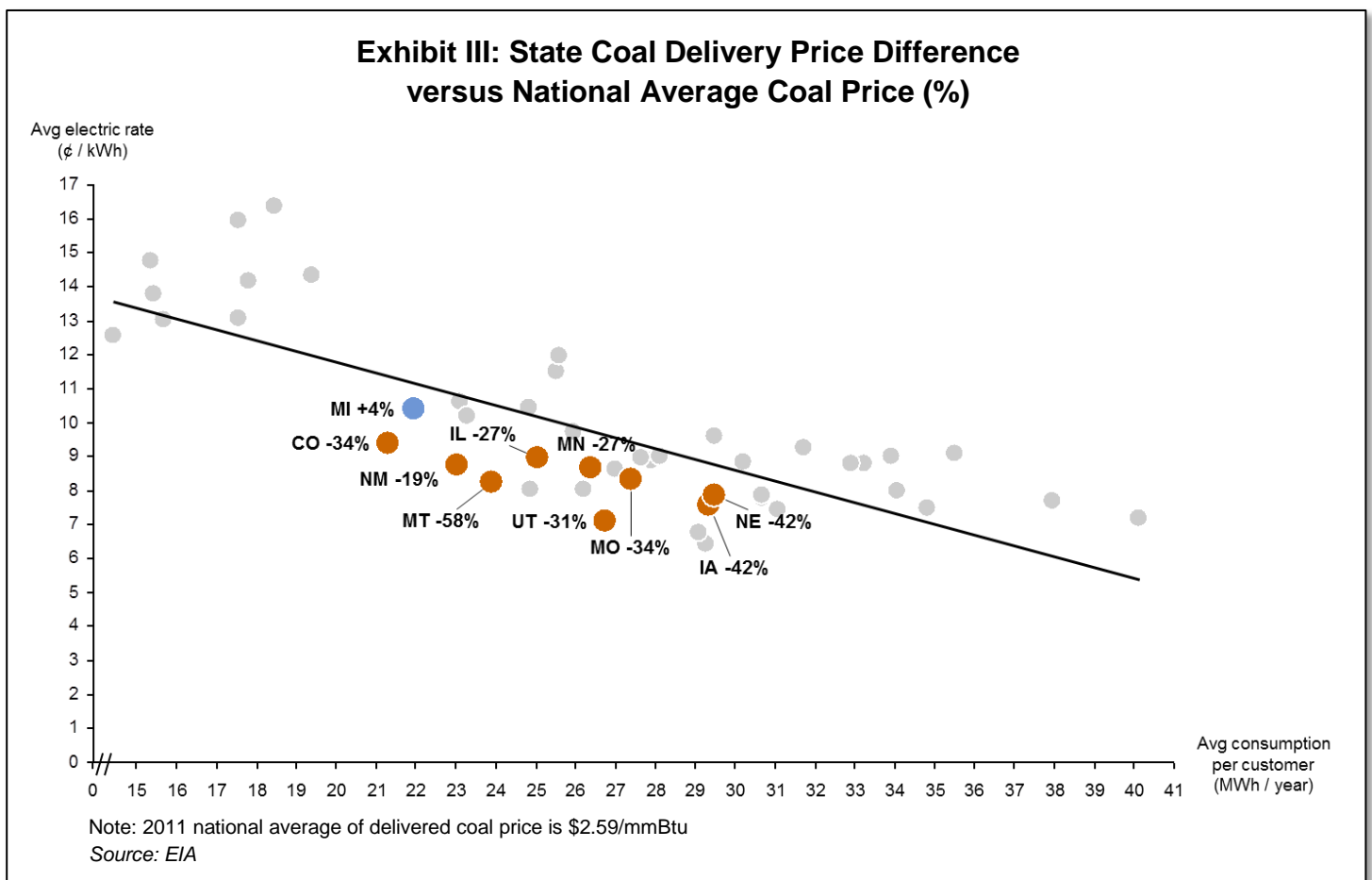


Source: EIA Form 861 2011, Moody's Industry Outlook February 2013, data for 2011

Overall Question 1: *Structural drivers of electric rates*

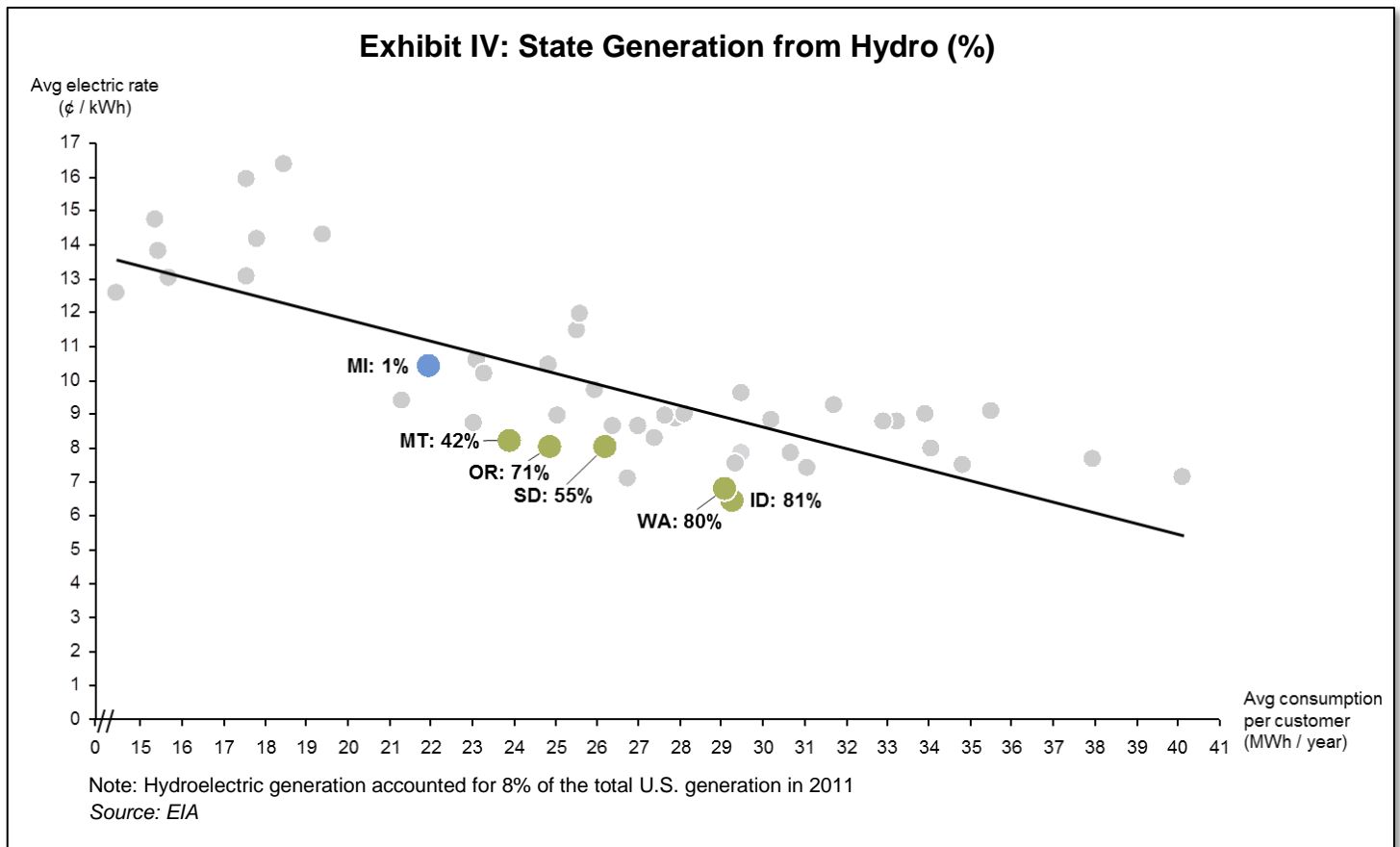
3. Three other structural factors explain an additional 25% of the variation in rates across states, and explain why some states fall significantly above or below the “best fit” line based on consumption.

- **Proximity to inexpensive coal** – especially western coal – is a powerful advantage for a number of states. As shown in Exhibit III, many states that have lower rates than their consumption would suggest (that is, they fall below the “best fit” line), such as CO, NM, IL, UT, and IA, have delivered coal prices well below the national average. By comparison, Michigan’s delivered coal price is 4% above the national average.



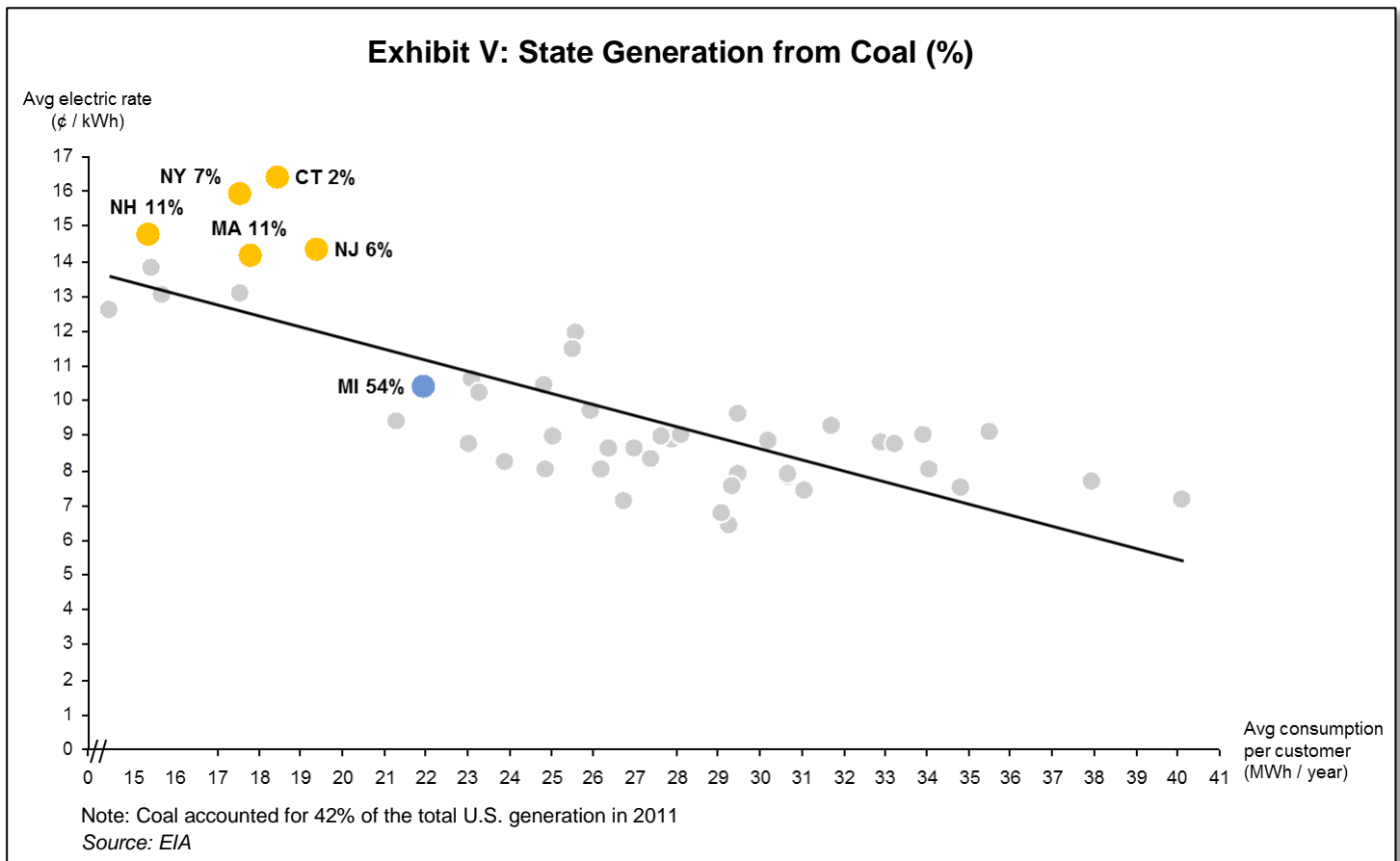
Overall Question 1: *Structural drivers of electric rates*

- **Access to plentiful, low-cost hydroelectric generation** is another powerful advantage, principally in the Pacific Northwest, that helps some states offer rates below what their average consumption would suggest. As shown in Exhibit IV, hydroelectric generation only accounted for 1% of the total generation in Michigan, whereas in some of the Pacific Northwestern states (e.g., MT, OR, SD, WA and ID), low-cost hydroelectric generation is the main source of electric power, accounting for 42% to 81% of in-state generation. The lower electric rates in these states have benefited from the vast amount of low-cost hydroelectric generation.



Overall Question 1: *Structural drivers of electric rates*

- The lack of coal generation**, which has supplied the cheapest electricity for decades, is a major disadvantage in the Northeast, helping to explain why those states' rates are higher than would be expected based on consumption. Coal generation was the lowest cost generation for decades before the tightening of environmental regulations and the decline in natural gas prices in recent years. States that have a lower percentage of coal generation have built more expensive gas plants to supply electricity in the past decades, which led to higher costs to recover and higher electric rates for customers to pay. As shown in Exhibit V, many states in the Northeast (e.g., NY, CT, NH, MA, and NJ) have little generation from coal and therefore higher electric rates. Michigan's coal generation accounted for 54% of the total in-state generation in 2011, above the 42% national average, which helps explain why Michigan's electric rates are lower than what the consumption level would suggest they should be.

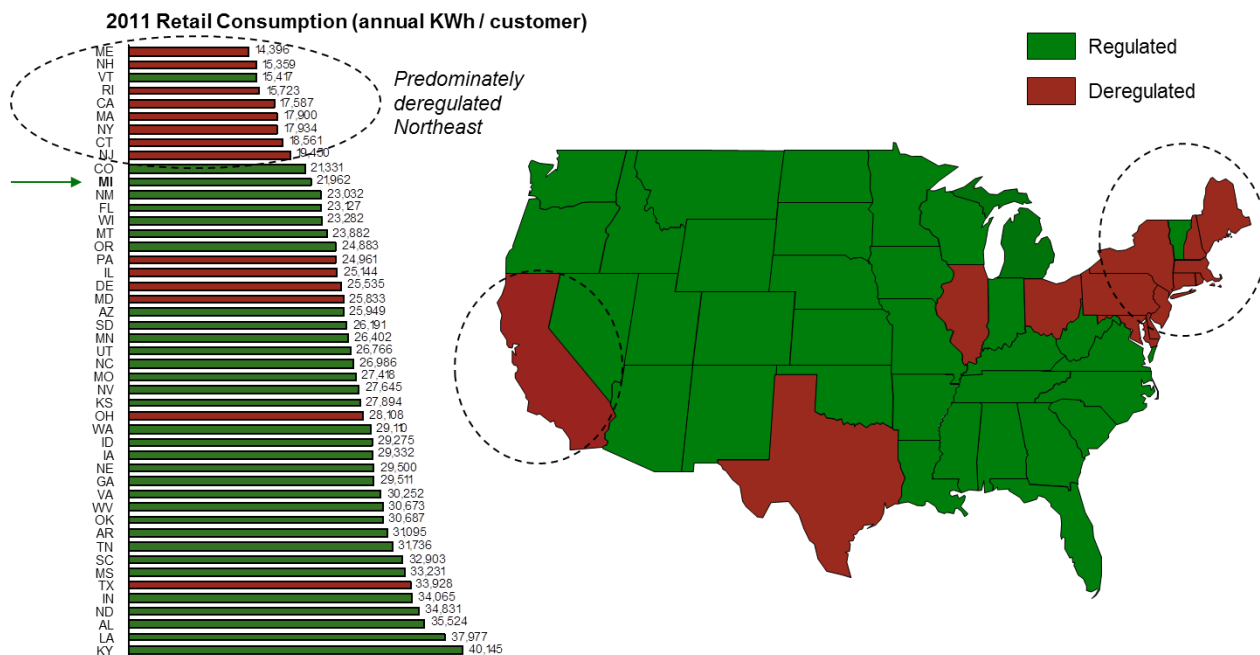


Overall Question 1: *Structural drivers of electric rates*

4. Deregulation has no ability to change the structural drivers for electric rates. Deregulated states still have higher rates than regulated states and the gap between them has existed for the past 15 years.

The fact that deregulation began in California and the Northeast is not surprising: these states have very low electricity consumption and poor access to coal, making them structurally likely to have higher rates. They experimented with deregulation in an attempt to lower those rates.

Exhibit VI: Electric Consumption by State



Note: excludes Alaska, Hawaii and Wyoming (very heavy industrial usage makes WY an outlier)

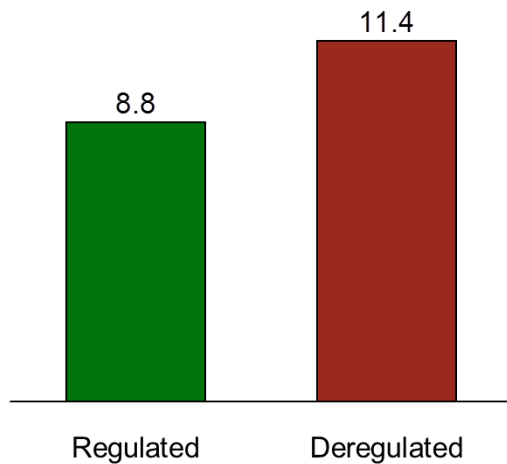
Source: EIA Form 861

Overall Question 1: *Structural drivers of electric rates*

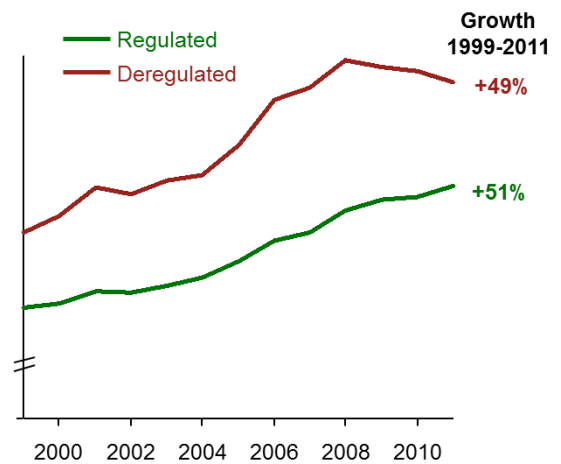
Deregulation has no ability to change these structural realities. Deregulated states still have higher rates than regulated states. The gap between higher average deregulated rates and lower average regulated rates has existed for the past 15 years.

Exhibit VII: Average Electric Rates in Regulated and Deregulated States

Average rates in deregulated states are 30% higher than in regulated states
(¢ / kWh)



Rates in regulated and deregulated states have grown at the same pace
(¢ / kWh)



Note: regulated and deregulated rates are based on weighted averages of the states
Source: EIA Form 861 (2011)